

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 6-9 have been cancelled.

New claim 20 has been added.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1 and 4, 5, and 10-20 are now pending in this application.

Rejection under 35 U.S.C. § 103

Claims 1, 4-16, 18, and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pub No. 2005/0003241 to Derflinger *et al.* (hereafter "Derflinger") in view of Materials Letters 57, 3305-3310, to Yang *et al.* (hereafter "Yang"). This rejection is respectfully traversed. Applicant does not necessarily agree that Yang is prior art and reserves the right to remove Yang as prior art.

Derflinger discloses a metallic intermediate layer 3, a further intermetallic layer 2b, and a slide layer system 4 that includes a slide layer 4a. See Derflinger at paragraphs 0020-0022. The metallic intermediate layers 3, 2b appear to be the same metal as in the hard material layer 2a. See Derflinger at paragraphs 0021 and 0026. Derflinger discloses that the slide layer 4a is formed of a carbide of at least one metal and dispersed carbon. See Derflinger at paragraphs 0022 and 0024. Derflinger further discloses a metal carbide layer 4b between the slide layer 4a and the intermediate layer 3. See Derflinger at paragraph 0027 and Figure 5.

However, Derflinger does not disclose or suggest a substrate covered at least partially with a layered coating, said layered coating comprising an intermediate coating and a hard carbon coating, said intermediate coating comprising: a first metal layer deposited on the substrate, said first metal layer consisting of Ti, a nitride layer deposited on said first metal layer, said nitride layer consisting of TiN, a second metal layer deposited on said nitride layer, said second metal layer consisting of Ti, a transition layer deposited on said second metal layer, said transition layer consisting of Ti_xC_y , wherein said hard carbon coating comprises a diamond-like nanocomposite (DLN) coating, as recited in claim 1. Claims 4, 5, 10-16, 18, and 19 depend from claim 1.

Derflinger discloses various materials that the layers of Derflinger can be made of in paragraphs 0021-0024. However, Derflinger does not disclose or suggest an intermediate coating that includes the particular layers and materials recited in claim 1: a first metal layer consisting of Ti, a nitride layer consisting of TiN, a second metal layer consisting of Ti, and a transition layer consisting of Ti_xC_y , as recited in claim 1.

Derflinger further discloses various examples of a layered structure, as listed in Table 1 of Derflinger, but none of these layered structures includes the particular materials recited in claim 1. As a result, Derflinger provides no disclosure or suggestion of the specific, particular features recited in claim 1.

Applicant notes that it is permissible to use “consisting of” language within a body of a claim under U.S. practice because the “consisting of” language limits only the element set forth in the clause where the “consisting of” language appears. See MPEP § 2111.03.

Yang discusses a diamond-like nanocomposite film but does not remedy the deficiencies of Derflinger. Yang also does not disclose or suggest a substrate covered at least partially with a layered coating comprising an intermediate coating of the substances recited in claim 1 and a hard carbon coating, as recited in claim 1.

Further, as discussed on page 6, lines 9-20, a substrate covered with an intermediate coating including a first metal layer consisting of Ti, a nitride layer consisting of TiN, a second metal layer consisting of Ti, and a transition layer consisting of Ti_xC_y exhibits

excellent adhesion in comparison to other intermediate coatings. Applicant respectfully submits that this accomplishment of an unexpected improved result rebuts any general allegation that the invention would have been obvious.

For at least the reasons discussed above, the combination of Derflinger and Yang does not disclose or suggest all of the features of claim 1. Reconsideration and withdrawal of this rejection is respectfully requested.

Allowable Subject Matter

Applicant gratefully acknowledges the indication that claim 17 includes allowable subject matter. Claim 17 has been amended to be placed in independent form.

New Claim

New claim 20 has been added. Claim 20 depends from claim 1 and is allowable over the prior art for at least the reasons discussed above and for its additional limitations.

Conclusion

Applicant submits that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith,

Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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